



Multi-Disciplinary Senior Design Conference
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ROCHESTER INSTITUTE OF TECHNOLOGY 2011-1 AND 2011-2 QUARTERS

P12401/P12402 Systems Test Plan

Multidisciplinary Senior Design

Using microcontroller battery charging program and 12401 Battery

Materials needed: 12401 Battery, ammeter

Program all 8 microcontrollers and insert them into all channel slots

Plug in power supply to AC outlet and connect barrel connector

Wait 16 seconds and verify all 8 red LEDs turn on

Plug discharged battery into channel 1

wait 16 seconds and verify red LED 1 turn off and green LED 1 starts blinking

Plug discharged battery into channel 2

wait 16 seconds and verify red LED 2 turn off and green LED 2 starts blinking

Plug discharged battery into channel 3

wait 16 seconds and verify red LED 3 turn off and green LED 3 starts blinking

Plug discharged battery into channel 4

wait 16 seconds and verify red LED 4 turn off and green LED 4 starts blinking

Plug discharged battery into channel 5

wait 16 seconds and verify red LED 5 turn off and green LED 5 starts blinking

Plug discharged battery into channel 6

wait 16 seconds and verify red LED 6 turn off and green LED 6 starts blinking

Plug discharged battery into channel 7

wait 16 seconds and verify red LED 7 turn off and green LED 7 starts blinking

Plug discharged battery into channel 8

wait 16 seconds and verify red LED 8 turn off and green LED 8 starts blinking

measure current going into battery 1, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 2, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 3, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 4, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 5, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 6, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 7, verify current going into battery is between 0.3 and 0.7 A

measure current going into battery 8, verify current going into battery is between 0.3 and 0.7 A

Unplug battery in channel 1

wait 16 seconds and verify green LED1 stops blinking and red LED1 goes solid

Unplug battery in channel 2

wait 16 seconds and verify green LED2 stops blinking and red LED2 goes solid

Unplug battery in channel 3

wait 16 seconds and verify green LED3 stops blinking and red LED3 goes solid

Unplug battery in channel 4

wait 16 seconds and verify green LED4 stops blinking and red LED4 goes solid

Unplug battery in channel 5

wait 16 seconds and verify green LED5 stops blinking and red LED5 goes solid

Unplug battery in channel 6

wait 16 seconds and verify green LED6 stops blinking and red LED6 goes solid

Unplug battery in channel 7

wait 16 seconds and verify green LED7 stops blinking and red LED7 goes solid

Unplug battery in channel 8

wait 16 seconds and verify green LED8 stops blinking and red LED8 goes solid

Unplug barrel connector from the input of the Charging dock